INTERMEDIATE AND DEPOT MAINTENANCE

PACKING PROCEDURES

PCU-29/A DROGUE/CONTAINER ASSEMBLY

PART NO. 14210-9

List of Effective Work Package Pages

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Reference Material

Organizational, Intermediate, and Depot Maintenance, Parachute Loft Requirements/Administration ..... WP 003 00

Alphabetical Index

Record of Applicable Technical Directives

None

1. GENERAL.

a. Packing instructions are provided with assumption that they will be carried out under ideal conditions in a parachute loft (WP 003 00). When a drogue parachute assembly must be packed under unfavorable conditions, provisions must be made to protect it from possible damage and excessive humidity.

b. In no case shall packing of a drogue parachute assembly be interrupted after packing operation has been started. If packing operation is interrupted due to unforeseen circumstances, parachute assembly shall be completely repacked per instructions contained in this Work Package (WP).

c. Quality Assurance (QA) points have been included in the procedures. When a procedural step is followed by "(QA)" there is a quality assurance requirement. Witnessing of (QA) steps may be delayed by (QA) if their satisfactory completion is verified in later steps.

d. Packing of the PCU-29/A Drogue/Container Assembly is a one-person operation. During packing procedures, packer and helper sides are used only as reference points.

e. This WP provides packing procedures for both original issue and inservice drogue parachute assemblies. Packing procedures are same for all assemblies.

2. PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Fixture, Holding, Drogue Parachute Container
—	C-Clamp
Refer to WP 005 00	Fid
—	Yard Stick
—	Stamp Pad
	-or-
—	Adjustable Metal Stencil
	-or-
—	Rubber Stamp Kit
	-or-
Style No. 8	Printing Set
	-or-
GG-P-655	Printing Set

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type I or IA
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A
MIL-I-6903	Ink, Marking, Light Blue
TT-I-1795	Ink, Marking, Black

a. Ensure that all support equipment and materials required are available prior to starting.

b. Inspect packing tools for nicks, burrs, or sharp edges which may cause damage to the parachute assembly.

c. Count and record number of packing tools.

d. Clean packing table.

3. LAYOUT OF DROGUE PARACHUTE ASSEMBLY.

a. Lay out drogue parachute assembly full length on packing table.

4. INSPECTION (SPECIAL).

a. Maximum scheduled repack cycle is 448 days.

5. SERVICE LIFE CHECK AND CONFIGURATION UPDATING.

NOTE

Unless otherwise noted, parachute component life shall start on the month of the date of manufacture and expire on the last day of that month.

a. All internal service life components, including cartridges, shall be replaced if service life expires prior to the next repack cycle. Repack cycles may be shortened to correspond to the first component that is expiring prior to the next inspection cycle. An external overage component (i.e. Parachute Harness Sensing Release Unit Cartridge) can be replaced without a parachute repack.

NOTE

Upon initiation of any Quality Deficiency Report (QDR), contact the In-Service Support Team at NAWCWD, China Lake, CA.

b. When replacing an external overage component without a parachute repack, draw a single red line through any information pertaining to that component on the Parachute Record (OPNAV 4790/101). The replacement component will be annotated on the next available line. The QA who witnessed the task shall apply the QA stamp to the right of the entry and complete the VIDS/MAF (OPNAV 4790/60).

c. A parachute assembly may be opened to permit compliance with a Technical Directive. After completion of directive, the parachute assembly repack cycle may be re-based if all parachute components have the necessary life available or may be returned with the original repack date in order to keep it aligned with the actual aircraft inspection cycle.

d. When a component reaches the service/total life limit, it shall be returned to supply for disposition.

e. If parts received from supply are lacking a date of manufacture and are new in manufacturer's packaging, they may be used for one complete repack cycle, then removed. Place "No Date of Manufacture" in the Date of Manufacture's block on the Parachute Record (OPNAV 4790/101). Submission of a Quality Deficiency Report (QDR) shall follow each occurrence.

f. Components without a service/total life shall be removed from service if the components do not pass inspection, as determined by Quality Assurance Representative (QAR) or Collateral Duty Inspector (CDI).

g. Drogue parachute for date placed in-service and date of manufacture on each parachute part for service/total life as follows:

Nomenclature	Service Life (Yr)	Total Life (Yr)
Drogue Parachute	Deleted	6

NOTE

The inner fabric liner and all metal parts shall remain in-service until they fail to meet the inspection criteria.

(1) Markings for completeness, legibility, and agreement with information on Parachute Record (OPNAV 4790/101).

(2) Compare configuration of parachute assembly to that shown in NAVAIR 13-1-6.2 Record of Applicable Technical Directives, and Illustrated Parts Breakdown.

6. DROGUE ASSEMBLY.

a. Canopy, suspension lines, riser, inner and outer closure flaps for contamination, mildew, cuts, tears, burns, fraying, and loose or missing stitching.

b. Suspension lines for twists and security of attachment at the skirt hem and riser.

c. Riser for twists and proper attachment to suspension lines. (QA)

d. Presence of tacking holding drogue riser retainer clip to riser. (QA)

e. Riser metal keeper sleeve location. Measure from cut end of riser locking tab toward metal keeper sleeve. Measurement should be 20 1/2-in ± 1/4 in. (under hand tension) (Figure 1). (QA)

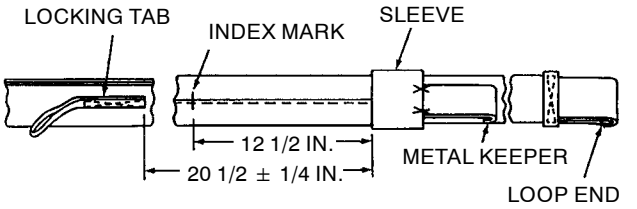


Figure 1. Index Markings

f. Presence of riser index mark and location. Measure from end of metal keeper sleeve toward canopy to index mark. Measurement should be 12 1/2 in. ± 1/4 in. (QA)

g. Inner and outer container closure flaps for security of attachment to container. (QA)

h. Container for cracks, sharp edges, breaks, dents, nicks, burrs, corrosion, and distortion.

7. PACKING.

8. INSTALLATION OF DROGUE CONTAINER INTO PACKING FIXTURE.

NOTE

Drogue parachute container holding fixture may be secured to packing table with bolts or C-clamps with back of container facing packer's side. An additional C-clamp may be snugged up to outside of packing fixture to ensure adequate support.

a. Position drogue container assembly into holding fixture with locking loop side of flaps orientated toward packer's right side (Figure 2).

b. Position and tie back inner and outer closure flaps, using temporary ties (nylon cord) (Figure 2).

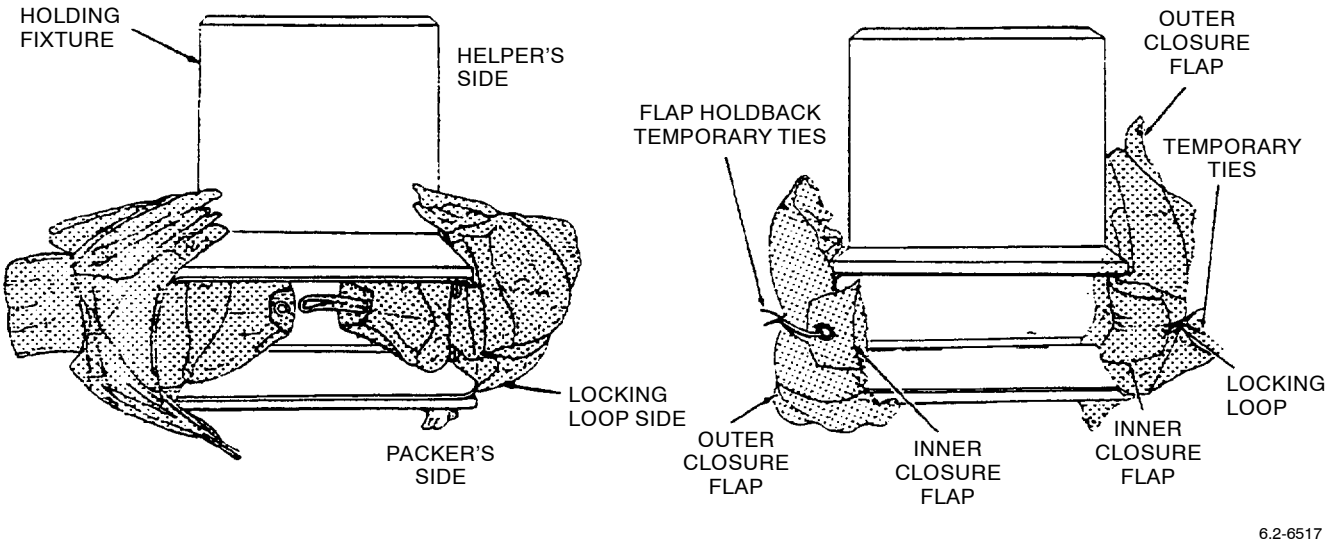


Figure 2. Installation of Drogue Container Into Packing Fixture

9. FOLDING OF CANOPY.

a. Position drogue parachute on packing table full length so that canopy apex is on packer's left-hand side of container and nameplate is facing down (Figure 3).

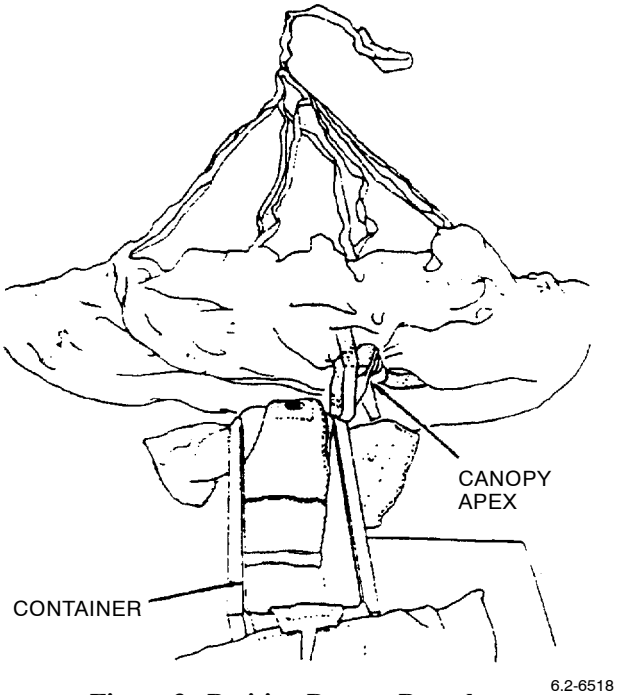


Figure 3. Position Drogue Parachute

NOTE

If the riser index mark is faded or missing, remark with marking ink.

b. Straighten folds on canopy and ensure that there are no dips or twists in suspension lines from skirt to confluence point.

c. Ensure that V-tabs are aligned so that gores 8, 1, 2, and 3 form one group leading to confluence point of one riser with gore 3 on top of 8 and gore 2 on top of 1. With gore 4 on top of 7 and gore 5 on top of 6, form another group leading to the confluence point of other riser. Straighten and smooth skirt and canopy (Figure 4).

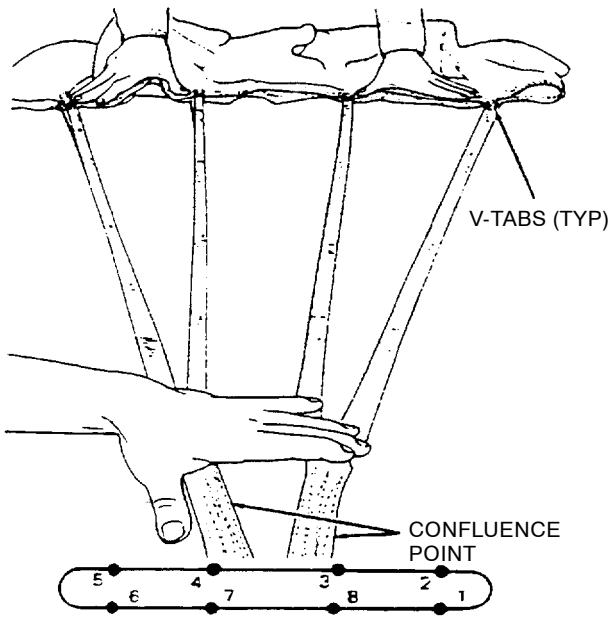


Figure 4. Ensure V-Tabs are Aligned

d. Fold and align gores 1 and 2 over gores 3 and 8; then fold gores 6 and 5 over gores 4 and 7 (Figure 5).

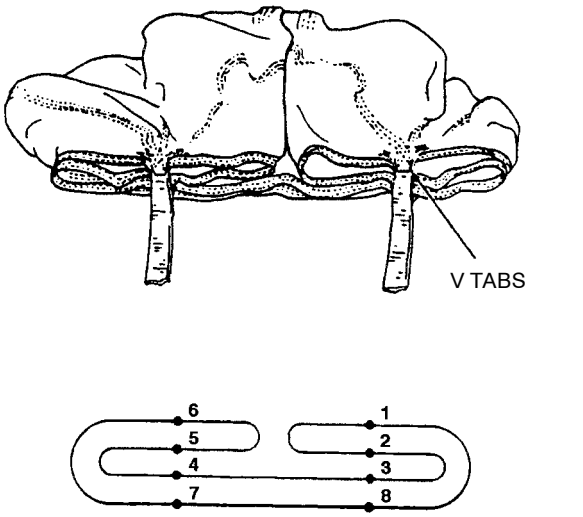


Figure 5. Fold and Align Gores

e. Holding suspension lines at v-tabs, lift canopy and fold gores 6, 5, 4 and 7 under gores 1, 2, 3, and 8. Lay out suspension lines so locking tab is on top (Figure 6).

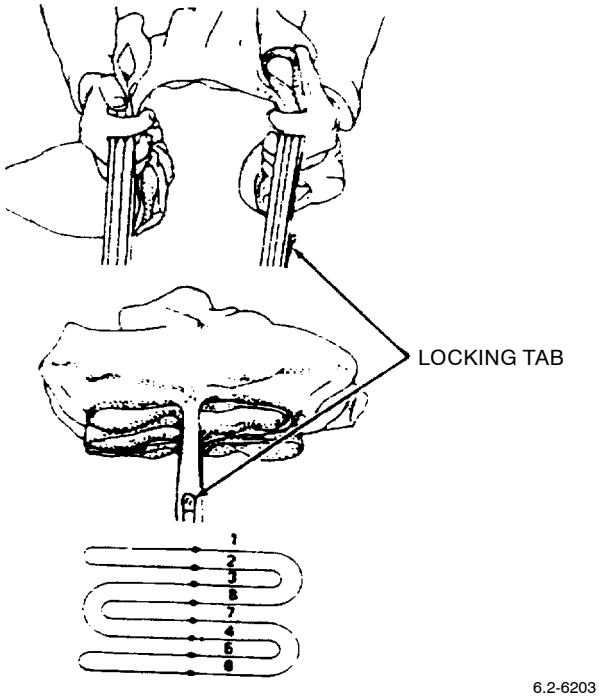


Figure 6. Lift Canopy and Fold Gores

f. Ensure that all gores are folded properly and hem is straight (Figure 7). (QA)

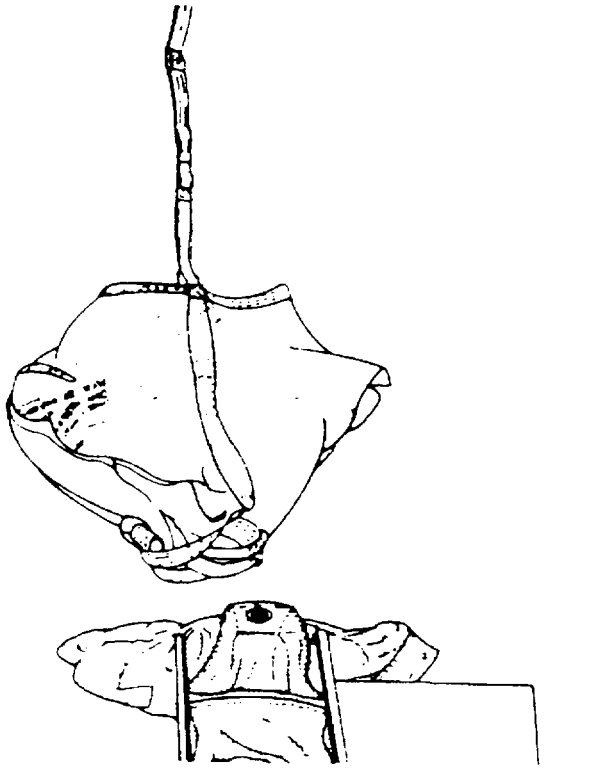


Figure 7. Ensure Gores Folded Properly

10. STOWING OF DROGUE CANOPY AND RISERS INTO CONTAINER.

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Insert canopy apex into bottom packer's right-hand side of drogue container. Evenly fold and distribute remaining canopy material into drogue container. (QA)

NOTE

As skirt is inserted into drogue container, fan out V-tabs across width of container.

b. Using packing aid, carefully depress and arrange canopy material deep enough so that inner closure flaps can be closed. Suspension lines must exit on grommet end of container (Figure 8).

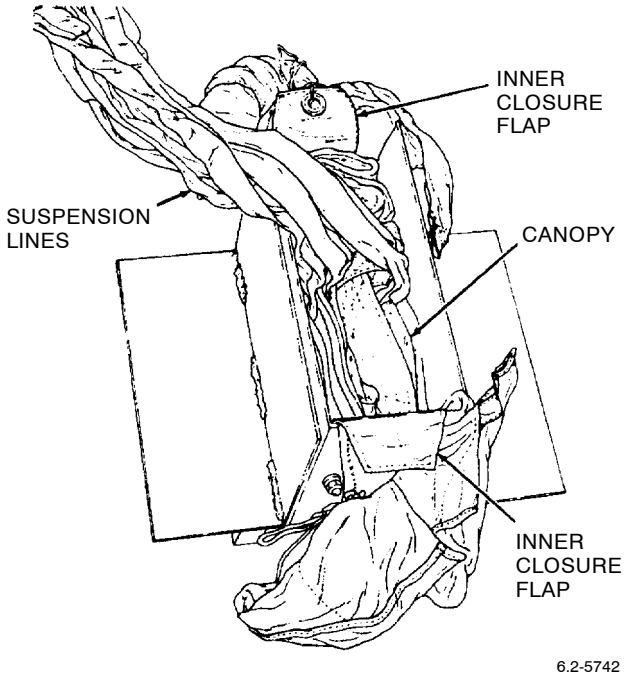


Figure 8. Carefully Depress and Arrange Canopy

c. Remove and discard both temporary tie cords from inner closure flaps. Insert one end of pull-up cord thru locking loop. Thread both ends thru grommet on opposite flap (Figure 9).

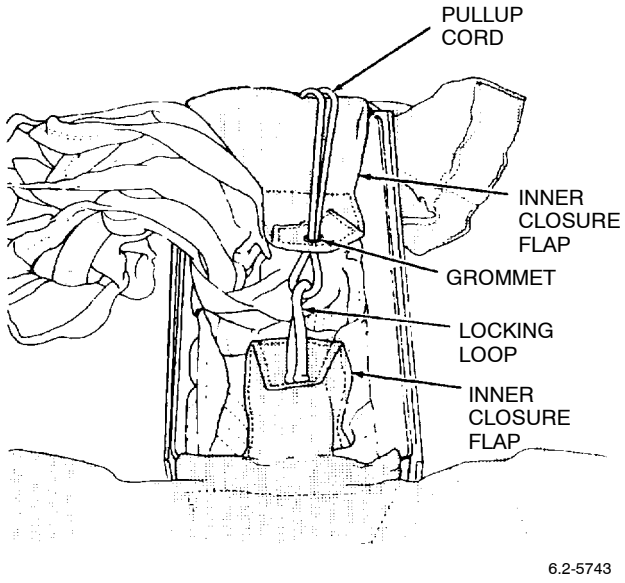


Figure 9. Remove and Discard Temporary Tie Cords

CAUTION

Rapid removal of pull-up cord can cause damage to locking loop.

NOTE

Beeswax may be lightly applied to the pull-up cord as a lubricant.

d. Pull locking loop thru grommet on opposite flap with pull-up cord. Insert locking tab on suspension line 1/2-in. thru locking loop from packer's left to right. Carefully remove pull-up cord (Figure 10). (QA)

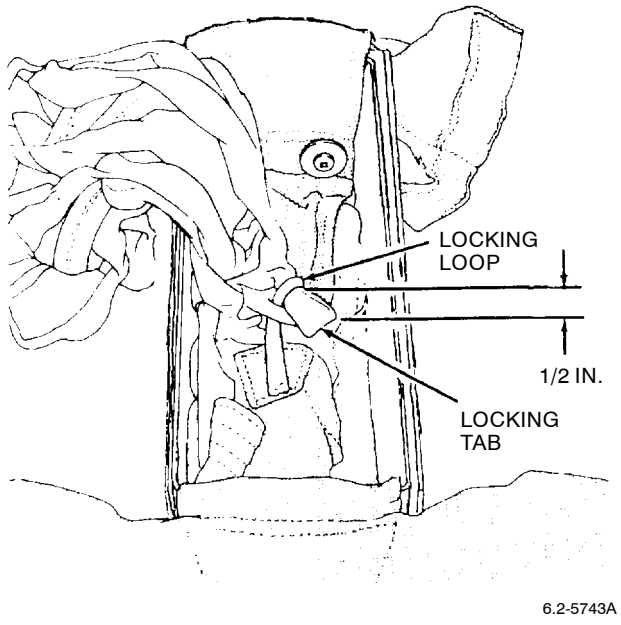
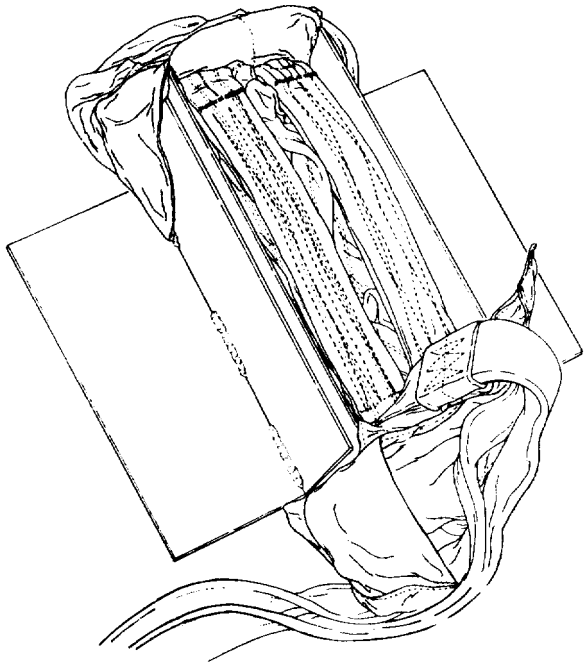


Figure 10. Pull Locking Loop Thru Grommet

e. Evenly stow suspension lines on top of inner flaps beginning with first stow on packer's right-hand side. First stow shall contain slack of suspension line from confluence point.

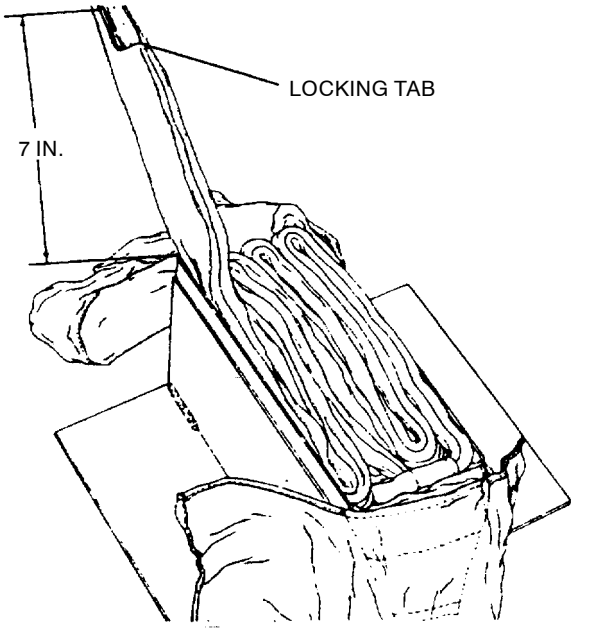
f. Stow confluence point (riser legs) flat across top of suspension line stows and depress into container with packing aid (Figure 11).



6.2-5743B

Figure 11. Stow Confluence Point

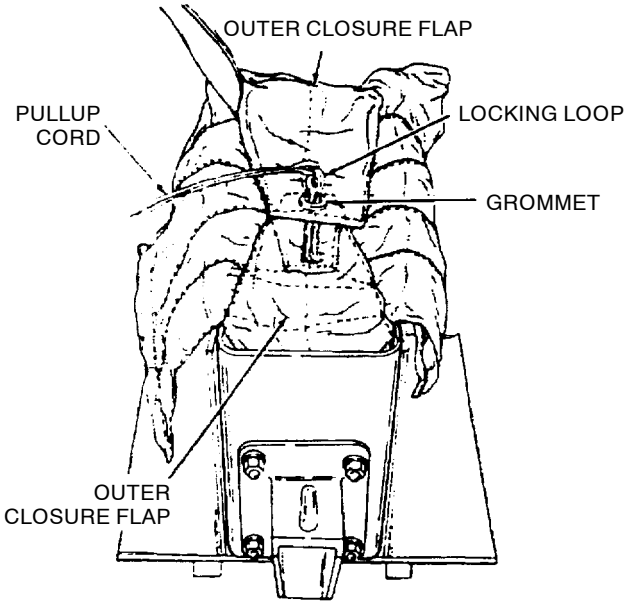
g. Using S-folds stow riser evenly until locking tab is about 7-in. from packer's left-hand side of container edge. The remaining 7-in. of riser material with locking tab shall exit container from packer's left-hand side closest to packer (Figure 12).



6.2-6204

Figure 12. Using S-Folds Stow Riser Evenly

h. Remove and discard temporary outer closure flap tie cords. Insert one end of pull-up cord thru locking loop. Thread both ends thru grommet on opposite flap (Figure 13).



6.2-6204A

Figure 13. Remove and Discard Temporary Outer Closure Flap Tie

CAUTION

Rapid removal of pull-up cord can cause damage to locking loop.

NOTE

Beeswax may be lightly applied to the pull-up cord as a lubricant.

i. With pull-up cord, pull locking loop thru grommet on opposite flap. Insert locking tab on riser 1/2-in. thru locking loop from packer's left to right. (QA)

j. Carefully remove pull-up cord. Riser exits flaps from packer's left-hand corner.

k. Using a packing fid, stow side panels of outer closure flaps (locking loop portion) into sides of container. Ensure riser exits from packer's left-hand side closest to packer (Figure 14).

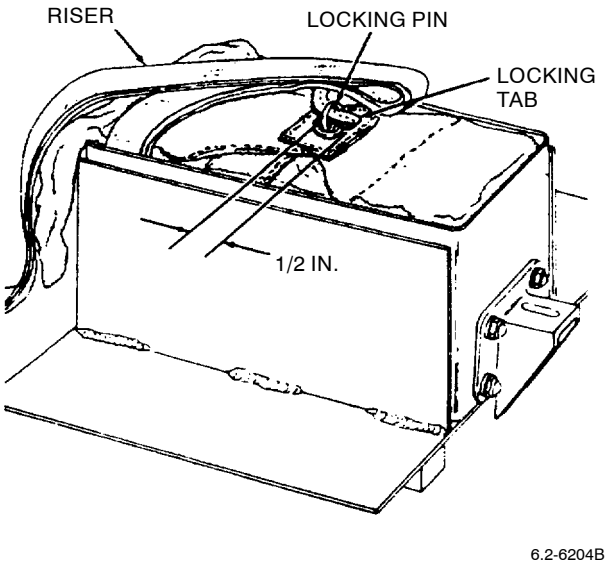


Figure 14. With a Packing Fid Stow Side Panels

l. Stow remaining riser on top of closure flap and route riser so index mark exits container 1 1/4-in. from end of container on packer's right-hand side (long piercer side) away from packer (Figure 15).

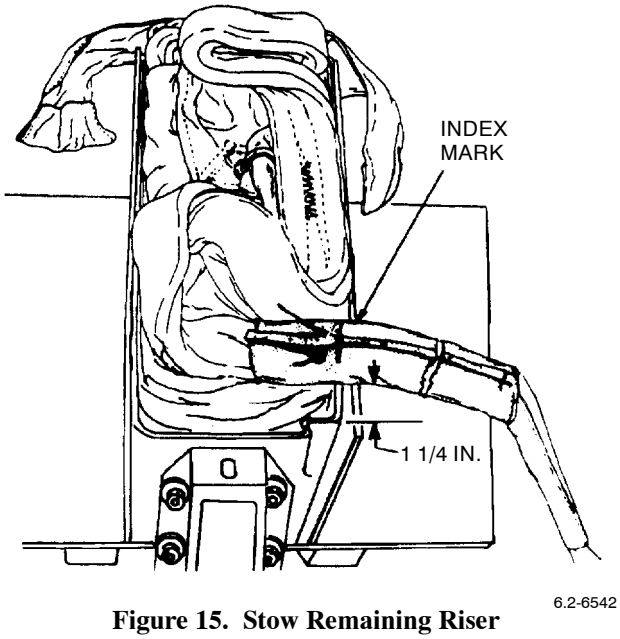


Figure 15. Stow Remaining Riser

m. Tack both sides of riser to outer closure flap on helper's side, using one turn of size FF thread, single and waxed. Tie off and trim off excess. The drogue riser retainer clip shall be on top of riser. If clip is on the wrong side of riser, cut tackings, remove and tack to opposite side. (QA)

n. Position pocketed flap over stowed and tacked riser. Insert flaps with packing fid downward between packed material and container inside surface. Handstitch flap 2 to 4 stitches per inch using size E thread, single (Figure 16).

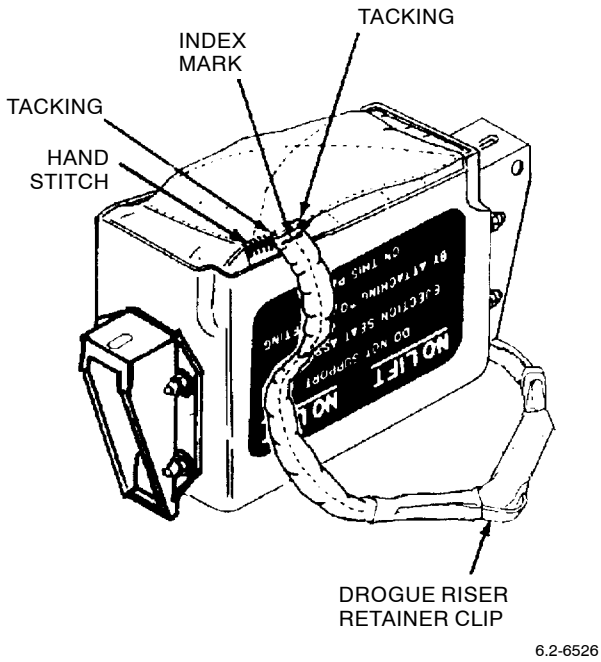


Figure 16. Position Pocketed Flap

o. Remove packed drogue assembly from holding fixture.

p. Using nylon cord, secure packed drogue assembly into container by tying a bowline knot at one end of cord. Wrap tie about center of container, holding bowline knot in desired location on side of container. Pass bitter end thru bowline knot and draw snug. Holding bight snug, form two half-hitches and an overhand knot. Trim off excess cord. Repeat this procedure with two additional tie cords on either side of the center tie (Figure 17).

11. FINAL CHECKOUT.

a. Account for all packing tools.

b. Examine packed drogue parachute for general condition.

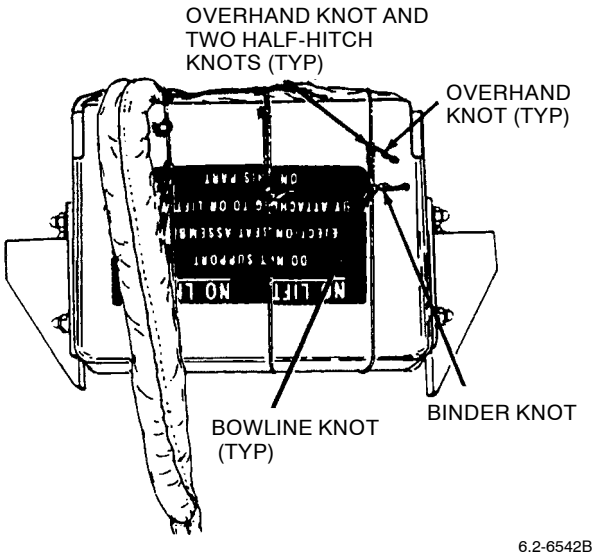


Figure 17. Secure Packed Drogue

c. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA).

d. QA inspector shall examine completeness and accuracy of all entries on Parachute Record (OPNAV 4790/101).

e. QA inspector shall sign Parachute Record (OPNAV 4790/101).

f. Send a (legible) copy of new Parachute Record to: Commander, Code 461000D, NAVAIRWARCENWPN DIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

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INTERMEDIATE AND DEPOT MAINTENANCE

REPAIR PROCEDURES

PCU-29/A DROGUE/CONTAINER ASSEMBLY

PART NO. 14210-9

List of Effective Work Package Pages

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Reference Material

Alphabetical Index

Record of Applicable Technical Directives

None

1. **INTRODUCTION.**

a. This Work Package (WP) contains instructions for maintenance, repair, replacement and fabrication of various drogue parachute parts or subassemblies to ensure that proper items of equipment remain in a Ready-For-Issue (RFI) status. Selected repairs shall be documented on Parachute Record (OPNAV 4790/101). For common repairs refer to WP 004 00.

2. DROGUE PARACHUTE/CONTAINER ASSEMBLY REPAIRS.

a. Repair of the drogue parachute is limited to the following:

(1) Replacement of index marking on riser.

(2) Cleaning of contaminated areas.

(3) Replacement of container assembly.

3. REPLACEMENT OF INDEX MARKING ON RISER.

Support Equipment Required

Part Number	Nomenclature
MIL-I-6903	Ink, Marking, Light Blue (Or Any Contrasting Color)

a. With riser under hand tension, measure from end of metal keeper sleeve toward canopy 12 1/2-in. ± 1/4-in. and apply index mark (Figure 1).

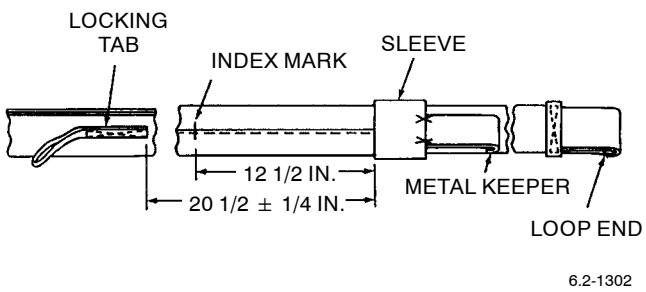

Figure 1. Replacement of Index Marking on Riser

b. Allow marking ink to dry for 20 to 30 min.

c. Verify correctness of marking. (QA)

4. REPLACEMENT OF CONTAINER ASSEMBLY.

a. Inspect replacement container per WP 004 00.

5. REPLACEMENT OF DROGUE PARACHUTE RISER KEEPER.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A
MIL-C-81706	Chemical Conversion Coating, Class 1A
M23053/1-104-0	Sleeving
QQ-A-250/11	6061 TG Aluminum Alloy 0.06 x 0.75 x 4.0 in.

a. Remove tacking securing keeper to drogue riser.

b. Remove damaged keeper.

c. Fabricate new keeper using aluminum alloy of 0.06 thickness (Figure 2).

d. Treat aluminum keeper with MIL-C-81706 chemical conversion coating per NAVAIR 01-1A-509.

e. Slide keeper into a 1.50 in. length of sleeving material.

f. Using a heat gun, shrink sleeving material around curved end of keeper.

g. Trim excess sleeving from ends of keeper. Ensure that holes in keeper are accessable.

h. Slide new aluminum keeper under nylon keeper.

i. Hand tack thru nylon keeper and holes in aluminum keeper with size FF thread; tie off (Figure 2).

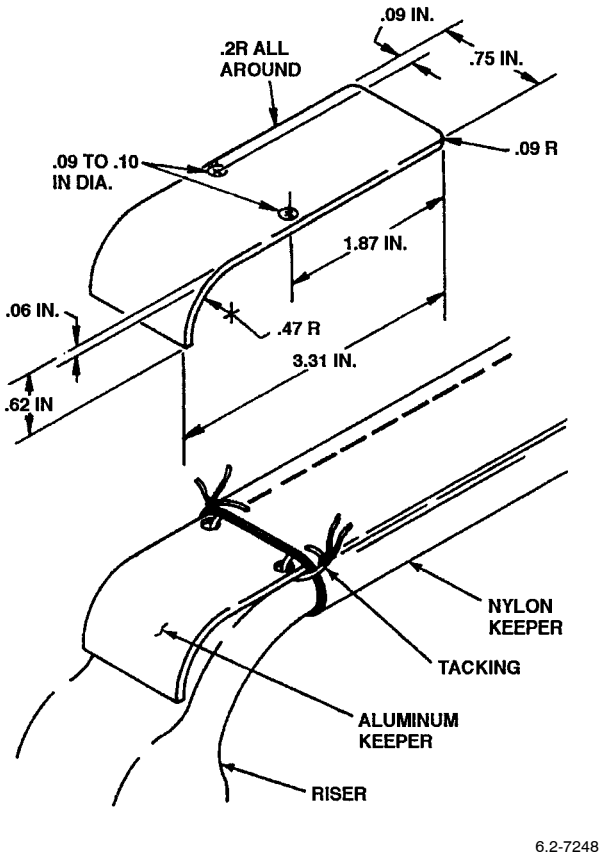

Figure 2. Riser Keeper Replacement

6. FABRICATION AND INSTALLATION OF DROGUE RISER ASSEMBLY SPANDEX SLEEVE.

Materials Required

Specification or Part Number	Nomenclature
1100/82	Spandex Fabric, Olive Drab
PIA-T-5038	Tape, Type III, 3 in., Sage Green or Olive Drab
PIA-W-4088	Webbing, 3 in., Type IV, (OD) Class 1, 1A or 2
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Deleted.

a. Lay out and cut two pieces of spandex fabric 9 3/4-in. by 4 1/2-in. Cut four corners per Figure 3. Ensure that fabric weave of material runs lengthwise. When installed it will run parallel to the riser assembly.

b. Lay one cut fabric sleeve on top of second cut fabric sleeve. Fold spandex sleeves in half. Sew 1/8-in. wide zig-zag stitch 1/8-in. from cut edge per Figure 3. Turn inside out.

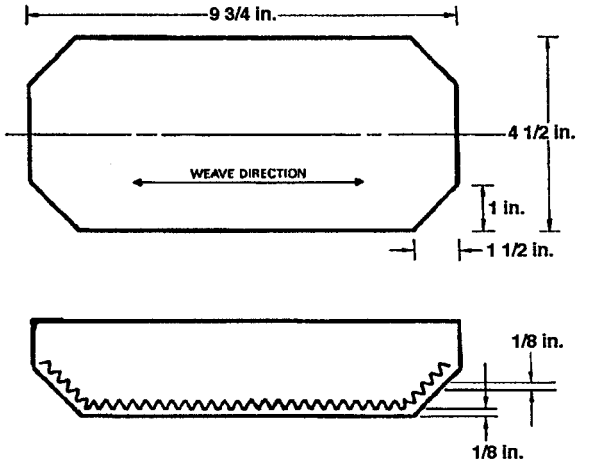

Figure 3. Spandex Sleeve Fabrication

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

c. Remove stitching securing lower keeper over spandex sleeve assembly to riser. Mark spandex sleeve location on lower sleeve. Cut stitching securing spandex sleeve to riser. Remove lower keeper. Retain lower keeper for reinstallation.

d. Remove tackings that secure metal keeper to upper keeper. Remove and retain metal keeper.

e. Mark upper keeper location on riser. Cut stitching securing upper keeper to riser. Remove upper keeper from riser and retain.

f. Mark spandex sleeve location on upper sleeve. Cut stitching securing spandex sleeve to riser. Remove spandex sleeve from riser and discard.

g. Slide replacement spandex sleeve on riser. Ensure seam and angled edge of spandex sleeve is facing edge of riser.

h. Use existing folds in riser, "S" fold riser in spandex sleeve.

i. Place upper end of spandex sleeve on upper spandex sleeve mark made during spandex sleeve removal.

j. Secure spandex sleeve to riser with one row of stitching.

k. Place lower end of spandex sleeve on lower sleeve mark made during spandex sleeve removal.

l. Secure spandex sleeve to riser with one row of stitching.

m. Reinstall upper keeper on mark made during removal.

n. Wrap upper keeper around riser, matching previous stitch pattern. Ensure treated end faces outboard. Secure with one row of stitching.

o. Install lower keeper over end of spandex sleeve, around riser. Follow stitch pattern (box stitch) on removed keeper. Secure with one row of stitching.

p. Install metal keeper into upper keeper. Metal keeper must be installed with curve portion facing toward riser loop end with tip of curve portion pressing against spandex sleeve and "S" folds on same side as riser locking loop and inserted until tack holes on metal keeper are even with lower edge of upper keeper.

q. Hand tack thru upper keeper, hole in metal keeper and riser with size FF thread, one turn single and waxed, repeat for opposite side.

7. INSTALLATION OF RISER KEEPER SHIELDING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A,
M23053/1-10-104-0	Sleeving, Heat Shrink

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove tacking securing keeper to drogue riser.

b. Remove keeper.

c. Slide keeper into a 1 1/2-in. length of sleeving material around curved end of keeper.

d. Using a heat gun, shrink sleeving material around curved end of keeper.

e. Trim excess sleeving from ends of keeper. Ensure that holes in keeper are accessible.

f. Slide covered keeper back into place under nylon keeper on drogue bridle.

g. Hand tack thru nylon keeper and holes in covered keeper with size FF thread, single and waxed; tie off.

8. REPAIR OF DROGUE RISER ASSEMBLY.

Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon Type IV, 3 in. Wide Class 1, 1A or 2
V-T-295	Thread, Nylon Size E, Type I or II Class A

NOTE

Do not remove installed cotton duck cover.

a. Cut a 13-in. length of 3-in. nylon webbing.

b. Starting at end of metal keeper sleeve, wrap webbing around riser lengthwise, with outside edge laying on center of riser.

c. Sew webbing to riser with one row of stitches securing both edges of webbing to center of riser.

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ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE

ILLUSTRATED PARTS BREAKDOWN

PCU-29/A DROGUE CONTAINER ASSEMBLY

PART NO. 14210-9

List of Effective Work Package Pages

Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.
1 thru 3	10						

Reference Material

Alphabetical Index

List of Figures

Record of Applicable Technical Directives

None

1. INTRODUCTION.

a. This Work Package (WP) contains information for ordering and identifying parts for the PCU-29/A Drogue Container Assembly (Figure 1).

2. USABLE ON CODES.

a. The usable on codes in this WP refer to aircraft applications for the PCU-29/A Drogue Container Assembly.

b. The following usable on codes apply to this (WP):

A – AV-8B, TAV-8B

3. SERVICE/TOTAL LIFE.

a. The service/total life information is contained in WP 023 00.

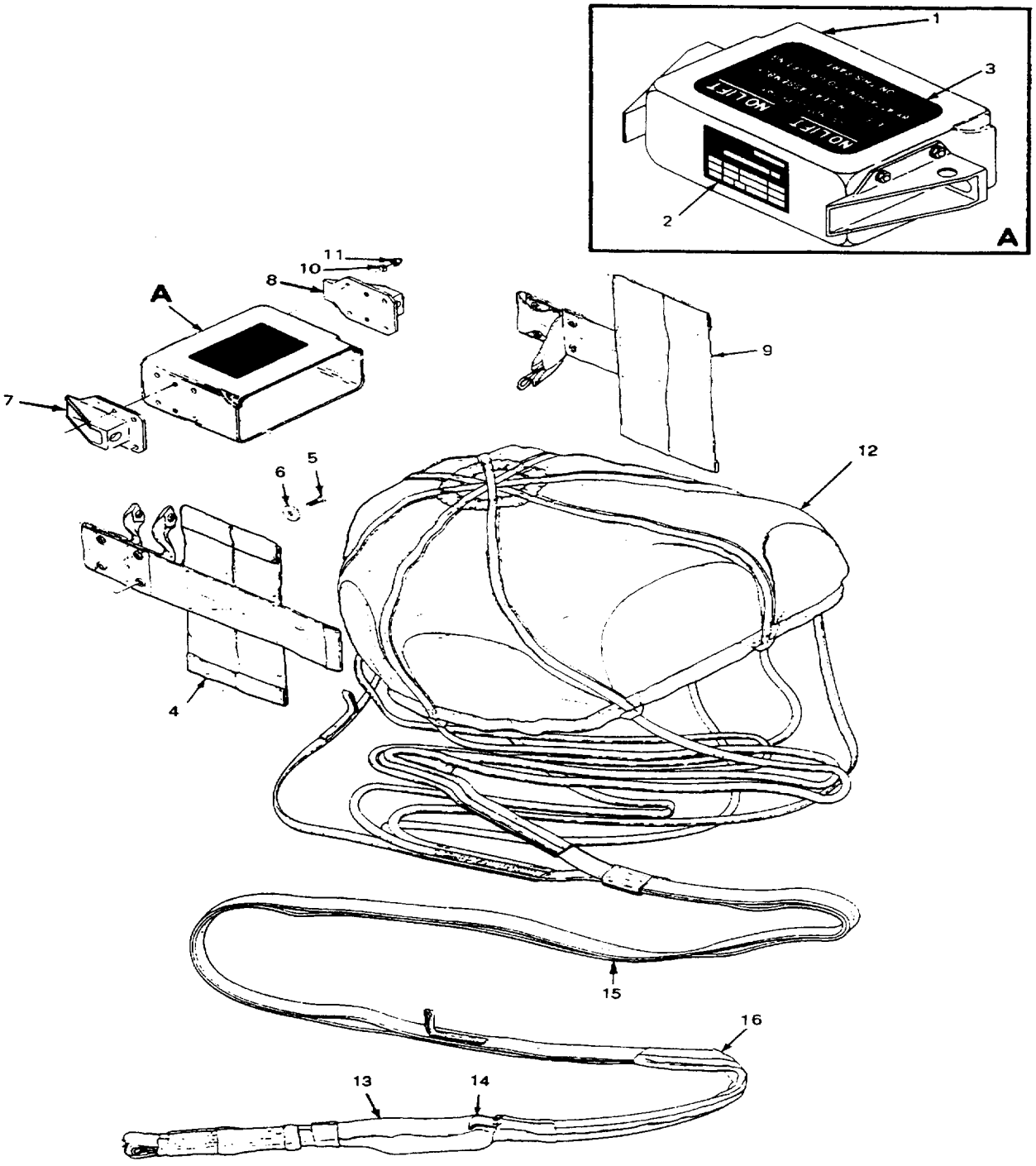

Figure 1. PCU-29/A Drogue/Container Assembly (Sheet 1 of 2)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	14210-9	DROGUE/CONTAINER ASSEMBLY	1	A	AGOGG
1	14210-19	. CONTAINER ASSEMBLY	1		PAGGG
2	586AS100-1	. . LABEL, PARACHUTE ASSEMBLY	1		MDDZZ
3	472P340C018-7	. . DECAL	1		PAGZZ
4	12353-3	. . OUTER FLAP ASSEMBLY	1		PAGZZ
		/ATTACHING PARTS/			
5	MS27039-1-11	. . BOLT	8		PAGZZ
6	AN970-3	. . WASHER	8		PAGZZ
7	14214-19	. . PIERCER (HELPER)	1		PAGZZ
8	14214-21	. . PIERCER	1		PAGZZ
		---*---			
9	12352-1	. . INNER FLAP ASSEMBLY	1		PAGZZ
		/ATTACHING PARTS/			
10	AN960PD10	. . WASHER	8		PAGZZ
11	12484-010	. . NUT	8		PAGZZ
		---*---			
12	12632-1	. DROGUE CANOPY	1		PCGGG
13	12632-13	. . SLEEVE ASSEMBLY	1		XAGZZ
14	12633-11	. . KEEPER	1		MGGZZ
15	12632-31	. . RISER	1		XAGZZ
16	12632-41	. . . COVER, MAKE FROM M23053/1-104-0	1		MGGZZ
		SLEEVING			

Figure 1. PCU-29/A Drogue/Container Assembly (Sheet 2 of 2)

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